| r                                                      | DECLARA                                                    | TION FOR PATENT APPLICA                                                                                                                                                                                  | TION AND APPOINTMENT O                                                                                               | ATTORNEY DOCKET NO QEDI-0001-1                                                                                      |
|--------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| my name; I beli<br>plural names are                    | below-named in<br>eve that I am the<br>e listed below) o   | ventor, I hereby declare that my residence original, first and sole inventor (if of the subject matter which is claimed used Numeric Analysis Engine,                                                    | dence, post office address and citize<br>only one name is listed below) or an<br>and for which a patent is sought or | nship are as stated below next to original, first and joint inventor (if a the invention (Design, if                |
| □ w                                                    | attached hereto. as filed on oplicable).                   | as Application Serial                                                                                                                                                                                    | No, and was                                                                                                          | amended on (if                                                                                                      |
|                                                        | . ,                                                        | (if applicable). as International A                                                                                                                                                                      | Application (PCT) No                                                                                                 | , and was amended on                                                                                                |
| any amendment<br>application in ac<br>United States Co | t(s) referred to a<br>ecordance with 1<br>ode § 119 of any | ed and understand the contents of the above. I acknowledge the duty to Fitle 37, Code of Federal Regulation foreign application(s) for patent or inventor's certificate having a filing of PRIOR FOREIGN | o disclose information which is many straints, § 1.56(a). I hereby claim foreit inventor's certificate listed below: | naterial to the examination of this gn priority benefits under <i>Title 35</i> , and have also identified below any |
| Nu                                                     | MBER                                                       | Country                                                                                                                                                                                                  | DAY/MONTH/YEAR FILED                                                                                                 | PRIORITY CLAIMED                                                                                                    |
|                                                        |                                                            |                                                                                                                                                                                                          |                                                                                                                      | Tes No                                                                                                              |

I hereby claim the benefit under *Title 35*, *United States Code*, § 120 of any United States application(s) or PCT international application(s) designating The United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of *Title 35*, *United States Code*, § 112, I acknowledge the duty to disclose material information as defined in *Title 37*, *Code of Federal Regulations*, § 1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

| APPLICATION NUMBER | FILING DATE | STATUS (Patented, Pending or Abandoned) |
|--------------------|-------------|-----------------------------------------|
|                    |             |                                         |
|                    |             |                                         |

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine, or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: I (We) hereby appoint as my (our) attorneys, with full powers of substitution and revocation, to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: Ajay A. Jagtiani, Registration Number 35,205.

Send correspondence to:

JAGTIANI & ASSOCIATES 10379-B Democracy Lane Fairfax, Virginia 22030

Telephone calls to: Ajay A. Jagtiani

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■ See following pages for additional joint inventors.

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| State or Country<br>Virginia                           | Zip<br>22031 | State or Country Zip Viriginia 22032                                |  |
| DATE<br>10/13/98                                       |              | SIGNATURE SHE BAR                                                   |  |

## DECLARATION . JR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

Page 2

| Post Office Address Street QED Innovations, 4013 Williamsburg Court |  |
|---------------------------------------------------------------------|--|
| City<br>Fairfax                                                     |  |
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| Full Name of Additional Joint Inventor DRISSEL, Mark |              | Citizenship United States                                           |              |
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| Full Name of Additional Joint In EICHLER, Matthew   | iventor      | Citizenship United States                           |                  |
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| Full Name of Additional Joint Inventor GARRETT, Richard |              | Citizenship United States                                           |              |
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| DATE<br>10/13/98                                        |              | SIGNATURE Richal                                                    | Havet        |

See following pages for additional joint inventors.

## DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

Page 2

| Full Name of Additional Joint Inventor GROAT, Robert |                         | Citizenship United States                                           |              |
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| DATE<br>10/13/98                                     |                         | SIGNATURE STREET FOR                                                | t. k         |

| Full Name of Additional Joint Inventor KIPP, Neill |                         | Citizenship United States                                           |              |
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| Full Name of Additional Joint Inventor RAPP, Perry Russell      |  | Citizenship United States                                                         |  |
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|                                                                 |  |                                                                                   |  |
| DATE<br>10/13/98                                                |  | Signature                                                                         |  |

| Full Name of Additional Joint Inventor | Citizenship                |
|----------------------------------------|----------------------------|
| Residence Address Street               | Post Office Address Street |
| City                                   | City                       |
| State or Country Zip                   | State or Country Zip       |
| DATE                                   | Signature                  |

See following pages for additional joint inventors.

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# DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY Page 2

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| Pull Nune of Additional John Inventor<br>GROAT, Robert                                                                                                                                                                                  |                           | Chizenship<br>United States                                                                                                                                                                         |                    |
| Residence Address - Street<br>45862 Aberdean Lane                                                                                                                                                                                       | •                         | Fon Office Address Street QED Innovations, 4013 Williamsburg                                                                                                                                        | g Court            |
| City<br>Vailey Lee                                                                                                                                                                                                                      |                           | Cby<br>Fairfax                                                                                                                                                                                      |                    |
| State or Country<br>Maryland                                                                                                                                                                                                            | zip<br>20 <del>6</del> 92 | State of Country<br>Virginia                                                                                                                                                                        | Zip<br>22032       |
| DATE<br>10/13/98                                                                                                                                                                                                                        |                           | sionary fred free to for                                                                                                                                                                            | <b>&gt;</b>        |
|                                                                                                                                                                                                                                         | •                         |                                                                                                                                                                                                     |                    |
| Pall Name of Additional Joint Inventor<br>KIPP, Neill                                                                                                                                                                                   |                           | Citizmolip United States                                                                                                                                                                            |                    |
| Residence Address - Street<br>319 New Kent Road                                                                                                                                                                                         |                           | Post Office Address Street<br>QED Innovations, 4013 Williamsbur                                                                                                                                     | g Court            |
| City<br>Blacksburg                                                                                                                                                                                                                      |                           | Cby<br>Fairfax                                                                                                                                                                                      |                    |
| Suite or Country<br>Virginia                                                                                                                                                                                                            | રાષ્ટ્ર<br>24060          | State or Country<br>Virginia                                                                                                                                                                        | 760<br>22032       |
| DATS<br>10/13/98                                                                                                                                                                                                                        |                           | SICRAFURE / W. KAN                                                                                                                                                                                  |                    |
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|                                                                                                                                                                                                                                         |                           | X JUNI PAI                                                                                                                                                                                          |                    |
| Full Name of Additional John Inventor<br>RAPP, Parcy Russell                                                                                                                                                                            |                           | Chicanahip United States                                                                                                                                                                            |                    |
| Pall Name of Additional John Inventor                                                                                                                                                                                                   |                           | Citizenship                                                                                                                                                                                         | g Court            |
| Pull Name of Additional John Inventor RAPP, Party Russell Residence Address - Street                                                                                                                                                    |                           | Chicanahip United States Fon Office Address Street                                                                                                                                                  | g Court            |
| Full Name of Additional John Inventor RAPP, Parry Russell Residence Address - Street 48278 Kool Drive City                                                                                                                              | Z <sub>2</sub> -<br>20653 | Chicanahip United States  Fon Office Address Street QED Innovations, 4013 Williamsburg                                                                                                              | g Court  21p 22032 |
| Pull Name of Additional John Inventor RAPP, Party Russell Residence Address - Street 48278 Keel Drive City Laxington Park State or Country                                                                                              |                           | Chizenship United States  Fon Office Address Street QED Innovations, 4013 Williamsburg City Fairfax  State or Country                                                                               | Zip                |
| Pull Name of Additional John Inventor RAPP, Party Russell Residence Address - Street 48278 Keel Drive City Laxington Park State or Country Maryland Data                                                                                |                           | Chiesnahip United States  Fon Office Address Street QED Innovations, 4013 Williamsburg City Fairfax  State or Country Virginia                                                                      | Zip                |
| Pull Name of Additional John Inventor RAPP, Party Russell Residence Address - Street 48278 Keel Drive City Laxington Park State or Country Maryland Data                                                                                |                           | Chiesnahip United States  Fon Office Address Street QED Innovations, 4013 Williamsburg City Fairfax  State or Country Virginia                                                                      | Zip                |
| Full Name of Additional John Inventor RAPP, Parry Russell  Residence Address - Street 48278 Keel Drive  City Lexington Park  State or Country Maryland  Data 10/13/98                                                                   |                           | Citizenship United States  Fon Office Address Street QED Innovations, 4013 Williamsburg City Fairfax  State or Country Virginia  Stomature                                                          | Zip                |
| Pull Name of Additional John Inventor RAPP, Parcy Russell Residence Address - Street 48278 Keel Drive City Laxington Park State or Country Maryland Date 10/13/98 Pull Name of Additional John Inventor                                 |                           | Citizenship United States  Fon Office Address Street QED Innovations, 4013 Williamsburg City Fairfax  State or Country Virginia  Standartes  Citizenship                                            | Zip                |
| Pull Name of Additional John Inventor RAPP, Parry Russell  Residence Address - Street 48278 Keel Drive  Cty Lexington Park  State or Country Maryland  Data 10/13/98  Pull Name of Additional John Inventor  Residence Address - Street |                           | Citizenship United States  Pon Office Address Street QED Innovations, 4013 Williamsburg City Fairfax  State or Country Virginia  State of Country Virginia  Citizenship  Post Office Address Street | Zip                |

See following pages for additional joins (reventors.

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DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

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| Full Name of Additional John Inventor GROAT, Robert        | Citizenskip<br>United States                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Residence Address - Street<br>45862 Aberdeen Lane          | Post Office Address Servet QED Innovations, 4013 Williamsburg Court                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ciry<br>Valley Lee                                         | Cay<br>Fairfax                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Size of Country Zip<br>Maryland 20692                      | Store or Country Virginin 22032                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Full Name of Additional Joint Inventor KIPP, Neill         | Citizenship United States                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Residence Address - Street 319 New Kent Road               | Post Office Address Server  QED Innovations, 4013 Williamsburg Court                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Cay<br>Blacksburg                                          | City<br>Fatrfax                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| State or Country Zip<br>Virginia 24060                     | Ster or Courtry Zap Virginia 22032                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| Poll Name of Additional Joint Inventor RAPP, Perry Russell | Citizenship<br>United States                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Residence Address - Street<br>48278 Keel Drivo             | Post Office Address Street QED Impovations, 4013 Williamsburg Court                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| City<br>Lexington Park                                     | Cir)<br>Fairfax                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| State or Country Tip<br>Maxyland 20653                     | State or Country Zig<br>Virginia 22832                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| Fall Name of Additional Jobs Investor                      | Cidenskip                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Residence Asidrose - Street                                | Post Office Address Street                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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See following pages for additional John inventors.

#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| In re Application of:                     | ) |           |
|-------------------------------------------|---|-----------|
| BURFIELD, et al.                          | ) |           |
| ,                                         | į | A . TT A. |
| Serial Number: to be Assigned             | ) | Art Unit: |
| Filed: Concurrently                       | į | Examiner: |
| For: OBJECT-BASED NUMERIC ANALYSIS ENGINE | ) |           |

Assistant Commissioner for Patents Washington, D.C. 20231

#### ASSOCIATE POWER OF ATTORNEY

Sir:

I hereby appoint Mark Guttag, Registration Number 33,057, as my associate attorney in the above-captioned application, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent and to transact all business in the Patent Office connected therewith.

However, please continue to address all future communications to the undersigned attorney at the following:

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Respectfully submitted,

Kjay A. Jagtian Registration Number 35,205

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October 9, 1998

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| Application Facility       | gl kelelin, and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Donker =                               | QFD1-0001-1  |
| Settal or Parint Cambridge |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1 varbinar                             |              |
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|                                                                         | that hap<br>owner of the small histories, concern identified below<br>official of the small histories concern empowered to bet on behalf of the co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ncen: identific                                                         | d below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| Address 4013 V                                                          | Villamsburg Court, Forfax, V. v. 22032                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 15, and reproduce of this statement                                     | that the above identified Stall histories concern qualifies as a small biast egg in 3° CFR 1904, for hipposes of paying reduced fees under section mumber of employees of the concern, including those of its affiliates, do it. (1) the number of employees is the average over the pressure issued verification of temporary basis diaphy each of the pay pends of the fixed verificative or indirectly or indirectly one concern controls of has the power to control to to control hopp.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | or ≠1-ar and 10<br>gx not exceed :<br>ar of the conce<br>ear and (2) or | 500 persons — for purposes<br>m of the persons employed<br>moerns are affiliates of each                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| with resident to the                                                    | that nghts under contract of law have been contexed to and remain with that it does give, in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | he small husur                                                          | ess concern identified above                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>⊠</b> 11₁                                                            | e specification filed herewith with the interaction and ancive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <u> </u>                                                                | · patent application alognite   such continue observe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| □ I):                                                                   | PCT International parent application identified above parent number ("antitio" above                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ii th                                                                   | - Intenditung to turne more                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | and and and co                                                          | neem or organization having                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| nghis to the my<br>held by any pe<br>made the inves-<br>inganization in | d by the above identified small business concern are not exclusive, each remion units tile separate verified statements avering to their status as smurson, other than the inventor, who would not qualify as an independent inton to be, any concern who would not qualify as a small business conder A** (FRT) are: 1 ach person or organization having any rights in their ostacli person, construction of the highest and organization.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | nventor under                                                           | 3" CFR 1 sice if that person "CFR 1 side, or a nonprofit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Dr.                                                                     | with the real contents of organization as listed below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                         | والمنافقة المنافقة والمنافقة والمناف |                                                                         | D holy ideal Claudi Business Concern D Nonprofit Organization                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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Lacknowledge the duty to file, in this application or natent, norification of only change in status resulting in loss of enintement to small entity status prior to paying, or at the time of paying, the earliest of the issue tee or any maintenance tee due after the date on small entity status prior to paying, or at the time of paying, the earliest of the issue tee or any maintenance tee due after the date on which status as a small entity is to longer appropriate (3° CFR 1.25th).

Hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and firster that these statements were made with me knowledge that willful takes statements and the likes of made are punichable by fine, or imprisonment, or both, under section 1001 or Title 18 or the Curted States Code, and that such willful false statements may reopardize the validity of the application, any patent issuing thereon, or any patent to which the visit of statements may reopardize the validity of the application.

| y with all statement is all recon-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |
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| For any the second seco | 10/15/98 |
| Chia Chen Chang, President                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 60/      |
| 4613 Williamsburg Court, Fairfax, V \ 22032                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | W W      |
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| resses appear below (hereinafter referred<br>ments in an OBJECT-BASED NUMERIC<br>or which an application for United States<br>;                                                                                                                                                                                                                                                                                  |
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| address is 4013 Williamsburg Court ous of acquiring the entire right, title and world;                                                                                                                                                                                                                                                                                                                           |
| deration, receipt of which is hereby n and transfer until said ASSIGNEE, the ication throughout the United States of granted on any division, continuation, re right, title and interest in and to said atents and inventor certificates in respect SSIGNOR under the terms of the Paris conventions and treaties; and the entire of addition, utility models, patents of may be granted throughout the world in |
| ments that legally may be required in said application or any other patent in foreign countries for said invention, the rights of ASSIGNEE in and to said ses, without further consideration and at at ASSIGNEE's request documents and S possession or control, and to provide wfully may be required of ASSIGNOR in tent application or patent encompassed under this instrument shall extend to entatives.    |
| oner of Patents and Trademarks to issue GNEE of the entire right, title and interest the use and behalf of ASSIGNEE'S legal h such Letters Patent may be granted, as R had this assignment and sale not been                                                                                                                                                                                                     |
| Signature Date:  10/15/98  SSN.: 578-64-3304  Notarization preferred but not required                                                                                                                                                                                                                                                                                                                            |
| Notarization preferred but not required                                                                                                                                                                                                                                                                                                                                                                          |
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| , and<br>sday of                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Notary Public                                                                                                                                                                                                                                                                                                                                                                                                    |
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| WHEREAS, Matthew Eichler, whose post office address as ASSIGNOR), has invented certain new and useful improvem ANALYSIS ENGINE (hereinafter referred to as THE INVENTION) for Letters Patent was filed October 15, 1998, Serial Number:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | nents in an OBJECT-BASED NUMERIC-<br>or which an application for United States                                                                                                                                                                                                                                                      |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| WHEREAS, QED Innovations, whose post office a Fairfax Virginia, (hereinafter referred to as ASSIGNEE), is desired interest in and to the same in the United States and throughout the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ous of acquiring the entire right, title and                                                                                                                                                                                                                                                                                        |  |  |
| NOW, THEREFORE, for good and valuable considuation acknowledged, we, ASSIGNOR, by these presents do sell, assign entire right, title and interest in and to said invention and application, including any and all United States Letters Patent continuation-in-part and reissue of said application; and the entire invention throughout the world, including the right to apply for pathereof and to claim priority pursuant to rights accorded As International Convention and all other available international cright, title and interest in and to any and all patents, patents importation, revalidation patents and inventor certificates which respect of said invention.                                                                                                                                                                                                                                                                                                                                                                                                                           | n and transfer until said ASSIGNEE, the ication throughout the United States of granted on any division, continuation, re right, title and interest in and to said atents and inventor certificates in respect SIGNOR under the terms of the Paris conventions and treaties; and the entire of addition, utility models, patents of |  |  |
| ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said invention, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said invention, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNOE at ASSIGNEE's request documents and information concerning the invention that are within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument. ASSIGNOR's obligations under this instrument shall extend to ASSIGNOR's heirs, executors, administrators and other legal representatives. |                                                                                                                                                                                                                                                                                                                                     |  |  |
| ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent referred to above to ASSIGNEE of the entire right, title and interest in and to the same, for ASSIGNEE's sole use and behalf; and for the use and behalf of ASSIGNEE's legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                     |  |  |
| made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 11                                                                                                                                                                                                                                                                                                                                  |  |  |
| Inventor: Matthew Eichler                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Massellie                                                                                                                                                                                                                                                                                                                           |  |  |
| Address: 2629 Washington Blvd.,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Signature                                                                                                                                                                                                                                                                                                                           |  |  |
| Arlington, Virginia 22201                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Date: /0 /15 / 9 8<br>SSN.: /09-50-5191                                                                                                                                                                                                                                                                                             |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Notarization preferred but not required                                                                                                                                                                                                                                                                                             |  |  |
| State of, City/County of,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                     |  |  |
| City/County of,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                     |  |  |
| Before me personally appeared and said                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | , and                                                                                                                                                                                                                                                                                                                               |  |  |
| acknowledges this instrument to be his (her) free act and deed this                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | day of                                                                                                                                                                                                                                                                                                                              |  |  |
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| My commission expires:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                     |  |  |

| WHEREAS, Mark Drissel, whose post office addresses ASSIGNOR), has invented certain new and useful improvemed ANALYSIS ENGINE (hereinafter referred to as THE INVENTION) for Letters Patent was filed October 15, 1998, Serial Number:                                                                                                                                                                                                                                                                                                                                                                                                                                     | ents in an OBJECT-BASED NUMERIC-<br>or which an application for United States                                                                                                                                                                                                                                                                                 |
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| WHEREAS, QED Innovations, whose post office a Fairfax Virginia, (hereinafter referred to as ASSIGNEE), is desired interest in and to the same in the United States and throughout the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ous of acquiring the entire right, title and                                                                                                                                                                                                                                                                                                                  |
| NOW, THEREFORE, for good and valuable consi acknowledged, we, ASSIGNOR, by these presents do sell, assign entire right, title and interest in and to said invention and appl America, including any and all United States Letters Patent continuation-in-part and reissue of said application; and the enti invention throughout the world, including the right to apply for pathereof and to claim priority pursuant to rights accorded As International Convention and all other available international cright, title and interest in and to any and all patents, patents importation, revalidation patents and inventor certificates which respect of said invention. | n and transfer until said ASSIGNEE, the ication throughout the United States of granted on any division, continuation, re right, title and interest in and to said atents and inventor certificates in respect SIGNOR under the terms of the Paris conventions and treaties; and the entire of addition, utility models, patents of                           |
| ALSO, ASSIGNOR hereby agrees to execute any docur connection with the filing, prosecution and maintenance of application(s) or inventor certificate(s) in the United States and including additional documents that may be required to affirm invention, all without further consideration. ASSIGNOR also agree ASSIGNEE's expense, to identify and communicate to ASSIGNOE' further assurances and testimony on behalf of ASSIGNOE that law respect of the prosecution, maintenance and defense of any par within the terms of this instrument. ASSIGNOR'S obligations ASSIGNOR'S heirs, executors, administrators and other legal representations.                      | said application or any other patent in foreign countries for said invention, the rights of ASSIGNEE in and to said ses, without further consideration and at at ASSIGNEE's request documents and so possession or control, and to provide wfully may be required of ASSIGNOR in tent application or patent encompassed under this instrument shall extend to |
| ASSIGNOR hereby authorizes and requests the Commission any and all United States Letters Patent referred to above to ASSIG in and to the same, for ASSIGNEE'S sole use and behalf; and for representatives and successors, to the full end of the term for whice fully and entirely as the same would have been held by ASSIGNO made.                                                                                                                                                                                                                                                                                                                                     | GNEE of the entire right, title and interest<br>the use and behalf of ASSIGNEE'S legal<br>h such Letters Patent may be granted, as                                                                                                                                                                                                                            |
| Inventor: Mark Drissel Address: 6314 Kiteline Court Columbia, Maryland 21044                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Signature Date: 10 /15/98 SSN.: Notarization preferred but not required                                                                                                                                                                                                                                                                                       |
| State of, City/County of,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | rvotarization pretend out not required                                                                                                                                                                                                                                                                                                                        |
| Before me personally appeared and said acknowledges this instrument to be his (her) free act and deed this                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | , and<br>day of                                                                                                                                                                                                                                                                                                                                               |
| My commission expires:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Notary Public                                                                                                                                                                                                                                                                                                                                                 |

My commission expires:

| ASSI                                                                                                                                                                                                                                                                                                                                                                                                                         | GNMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| as ASSIGNOR), has invented certain new and us                                                                                                                                                                                                                                                                                                                                                                                | st office addresses appear below (hereinafter referred the eful improvements in an OBJECT-BASED NUMERICAL INVENTION) for which an application for United State Number:;                                                                                                                                                                                                                                                                                                                                                                                        |
| WHEREAS, QED Innovations, whose Fairfax Virginia, (hereinafter referred to as ASSIC interest in and to the same in the United States and                                                                                                                                                                                                                                                                                     | post office address is 4013 Williamsburg Court<br>NEE), is desirous of acquiring the entire right, title and<br>throughout the world;                                                                                                                                                                                                                                                                                                                                                                                                                          |
| acknowledged, we, ASSIGNOR, by these presents entire right, title and interest in and to said inver America, including any and all United States I continuation-in-part and reissue of said application invention throughout the world, including the right thereof and to claim priority pursuant to rights International Convention and all other available right, title and interest in and to any and all page 1.        | aluable consideration, receipt of which is hereby do sell, assign and transfer until said ASSIGNEE, the ation and application throughout the United States of a setters. Patent granted on any division, continuation in; and the entire right, title and interest in and to said to apply for patents and inventor certificates in respect accorded ASSIGNOR under the terms of the Parisinternational conventions and treaties; and the entire interns, patents of addition, utility models, patents of ficates which may be granted throughout the world in |
| connection with the filing, prosecution and ma<br>application(s) or inventor certificate(s) in the Unit<br>including additional documents that may be requ<br>invention, all without further consideration. ASSIGNEE'S expense, to identify and communicate<br>information concerning the invention that are with<br>further assurances and testimony on behalf of ASSI<br>respect of the prosecution, maintenance and defer | tute any documents that legally may be required in intenance of said application or any other patentied States and in foreign countries for said invention ired to affirm the rights of ASSIGNEE in and to said the total ASSIGNEE at ASSIGNEE's request documents and in ASSIGNOR's possession or control, and to provide a signer that lawfully may be required of ASSIGNOR in the second and the total application or patent encompassed is obligations under this instrument shall extend to er legal representatives.                                     |
| any and all United States Letters Patent referred to in and to the same, for ASSIGNEE'S sole use and b representatives and successors, to the full end of the                                                                                                                                                                                                                                                                | the Commissioner of Patents and Trademarks to issue above to ASSIGNEE of the entire right, title and interest ehalf; and for the use and behalf of ASSIGNEE's legal term for which such Letters Patent may be granted, as d by ASSIGNOR had this assignment and sale not been                                                                                                                                                                                                                                                                                  |
| Inventor: Richard Garrett Address: 9852 Fairfax Square #225 Fairfax, Virginia 22031                                                                                                                                                                                                                                                                                                                                          | Signature Date: OCT. 15,1998 SSN.: 330-50-9370 Notarization preferred but not required                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| State of,<br>City/County of,                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Before me personally appeared and said<br>acknowledges this instrument to be his (her) free ac                                                                                                                                                                                                                                                                                                                               | t and deed this day of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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Notary Public

| ASSIGNOR'S heirs, executors, administrators and other legal  ASSIGNOR hereby authorizes and requests the Com any and all United States Letters Patent referred to above to in and to the same, for ASSIGNEE'S sole use and behalf; are representatives and successors, to the full end of the term for fully and entirely as the same would have been held by AS made.  Inventor: Robert Groat Address: 45862 Aberdeen Lane  Valley Lee, Maryland 20692  State of | representatives.  namissioner of Patents and Trademarks to issue of ASSIGNEE of the entire right, title and interest and for the use and behalf of ASSIGNEE'S legal or which such Letters Patent may be granted, as SSIGNOR had this assignment and sale not been  Signature  Date: DISTB  SSN.: 215808492  Notarization preferred but not required |
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| ASSIGNOR hereby authorizes and requests the Comany and all United States Letters Patent referred to above to in and to the same, for ASSIGNEE'S sole use and behalf; are presentatives and successors, to the full end of the term for fully and entirely as the same would have been held by AS made.  Inventor: Robert Groat Address: 45862 Aberdeen Lane Valley Lee, Maryland 20692  State of                                                                  | representatives.  namissioner of Patents and Trademarks to issue of ASSIGNEE of the entire right, title and interest and for the use and behalf of ASSIGNEE'S legal or which such Letters Patent may be granted, as SSIGNOR had this assignment and sale not been  Signature  Date: DISTB  SSN.: 215808492  Notarization preferred but not required |
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| Assignor hereby authorizes and requests the Comany and all United States Letters Patent referred to above to in and to the same, for Assignee's sole use and behalf; are presentatives and successors, to the full end of the term for fully and entirely as the same would have been held by Assignee.                                                                                                                                                           | representatives.  nmissioner of Patents and Trademarks to issue of ASSIGNEE of the entire right, title and interest and for the use and behalf of ASSIGNEE'S legal or which such Letters Patent may be granted, as                                                                                                                                  |
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| Assignor hereby authorizes and requests the Com                                                                                                                                                                                                                                                                                                                                                                                                                   | representatives.  nmissioner of Patents and Trademarks to issue                                                                                                                                                                                                                                                                                     |
| Assignor's heirs, executors, administrators and other legal                                                                                                                                                                                                                                                                                                                                                                                                       | representatives.                                                                                                                                                                                                                                                                                                                                    |
| ASSIGNOR'S heirs, executors, administrators and other legal                                                                                                                                                                                                                                                                                                                                                                                                       | representatives.                                                                                                                                                                                                                                                                                                                                    |
| within the terms of this histrificant. Assignor's cong-                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                     |
| respect of the prosecution, maintenance and defense of a within the terms of this instrument. ASSIGNOR'S oblig-                                                                                                                                                                                                                                                                                                                                                   | any patent application or patent encompassed                                                                                                                                                                                                                                                                                                        |
| further assurances and testimony on behalf of ASSIGNEE t                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                     |
| information concerning the invention that are within ASSI                                                                                                                                                                                                                                                                                                                                                                                                         | IGNOR'S possession or control, and to provide                                                                                                                                                                                                                                                                                                       |
| Assignee's expense, to identify and communicate to Ass                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                     |
| including additional documents that may be required to invention, all without further consideration. ASSIGNOR als                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                     |
| application(s) or inventor certificate(s) in the United State                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                     |
| connection with the filing, prosecution and maintenan-                                                                                                                                                                                                                                                                                                                                                                                                            | ce of said application or any other patent                                                                                                                                                                                                                                                                                                          |
| ALSO, ASSIGNOR hereby agrees to execute any                                                                                                                                                                                                                                                                                                                                                                                                                       | documents that legally may be required in                                                                                                                                                                                                                                                                                                           |
| respect of said invention.                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                     |
| importation, revalidation patents and inventor certificates v                                                                                                                                                                                                                                                                                                                                                                                                     | which may be granted throughout the world in                                                                                                                                                                                                                                                                                                        |
| right, title and interest in and to any and all patents, p                                                                                                                                                                                                                                                                                                                                                                                                        | patents of addition, utility models, patents of                                                                                                                                                                                                                                                                                                     |
| International Convention and all other available internati                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                     |
| invention throughout the world, including the right to apply<br>thereof and to claim priority pursuant to rights accord                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                     |
| continuation-in-part and reissue of said application; and the                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                     |
| America, including any and all United States Letters P                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                     |
| entire right, title and interest in and to said invention and                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                     |
| NOW, THEREFORE, for good and valuable acknowledged, we, ASSIGNOR, by these presents do sell,                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |
| NOW TUPPEPOPE for and and arbeble                                                                                                                                                                                                                                                                                                                                                                                                                                 | and dentiles and the Control of the Control                                                                                                                                                                                                                                                                                                         |
| interest in and to the same in the United States and through                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |
| Fairfax Virginia, (hereinafter referred to as ASSIGNEE), is                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                     |
| WHEREAS, QED Innovations, whose post of                                                                                                                                                                                                                                                                                                                                                                                                                           | ffice address is 4012 Williamshows Count                                                                                                                                                                                                                                                                                                            |
| WHEREAS, QED Innovations, whose post of                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                     |
| Letters Patent was filed October 15, 1998, Serial Number WHEREAS, QED Innovations, whose post of                                                                                                                                                                                                                                                                                                                                                                  | :;                                                                                                                                                                                                                                                                                                                                                  |
| ANALYSIS ENGINE (hereinafter referred to as THE INVENTI<br>Letters Patent was filed October 15, 1998, Serial Number                                                                                                                                                                                                                                                                                                                                               | ION) for which an application for United States                                                                                                                                                                                                                                                                                                     |
| Letters Patent was filed October 15, 1998, Serial Number                                                                                                                                                                                                                                                                                                                                                                                                          | rovements in an OBJECT-BASED NUMERIC-<br>ION) for which an application for United States                                                                                                                                                                                                                                                            |

10-15-1998 3:11PM FROM

#### **ASSIGNMENT**

WHEREAS, QED Innovations, whose post office address is 4013 Williamsburg Court, Fairfux Virginia, (hereinafter referred to as ASSIGNEE), is desirous of acquiring the entire right, this and interest in and to the same in the United States and throughout the world;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, we, ASSIGNOR, by these presents do sell, assign and transfer until said ASSIGNOR, the entire right, title and interest in and to said invention and application throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said invention throughout the world, including the right to apply for patents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded Assignor under the terms of the Paris international Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and inventor certificates which may be granted throughout the world in respect of said invention.

ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said invention, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said invention, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNOR at ASSIGNEE's request documents and information concerning the invention that are within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNOR that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument. ASSIGNOR's obligations under this instrument shall extend to ASSIGNOR's heirs, executors, administrators and other legal representatives.

ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to Issue any and all United States Letters Patent referred to above to ASSIGNEE of the entire right, title and interest in and to the same, for ASSIGNEE's sole use and behalf, and for the use and behalf of ASSIGNEE's legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been made.

| Inventor: Neill Kipp<br>Address: 319 New Kent Road<br>Blacksburg, Virginia 24060                           | Signature Date: 10/15/99 SSN.: 260-06-0637 Notarization preferred but not required |
|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| State of                                                                                                   | · ·                                                                                |
| Before me personally appeared and said acknowledges this instrument to be his (her) free act and deed this | , and day o                                                                        |
| My committee or there                                                                                      | Notary Public                                                                      |

My commission expires:

#### **ASSIGNMENT**

WIJEREAS, Perry Russell Rapp, whose post office addresses appear below (hereinafter referred to as ASSIGNOR), has invented certain new and useful improvements in an OBJECT-BASED NUMERIC-ANALYSIS ENGINE (hereinafter referred to as THE INVENTION) for which an application for United States Letters Patent was filed October 15, 1998, Serial Number:\_\_\_\_\_\_;

WHEREAS, QED Innovations, whose post office address is 4013 Williamsburg Court, Fairfax Virginia, (hereinafter referred to as ASSIGNEE), is desirous of acquiring the entire right, title and interest in and to the same in the United States and throughout the world;

NOW. THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, we, ASSIGNOR, by these presents do sell, assign and transfer until said ASSIGNEE, the entire right, title and interest in and to said invention and application throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said invention throughout the world, including the right to apply for patents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded ASSIGNOR under the terms of the Paris International Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and inventor certificates which may be granted throughout the world in respect of said invention.

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| made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | R Had this assignment and sale not beet |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| inventor: Perry Russell Rapp<br>Address: 48278 Keel Drive<br>Laxington Park, Maryland 20653                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Signature Oct 15 1998 SSN:              |
| m 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Notarization preferred but not required |
| State of City/County of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                         |
| Before me personally appeared and said                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | und,                                    |
| acknowledges this instrument to be his (her) free act and deed this                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | day o                                   |
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My commission expires:

| ASSIGNMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WHEREAS, Evan G. Burfield, whose post office address as ASSIGNOR), has invented certain new and useful improved ANALYSIS ENGINE (hereinafter referred to as THE INVENTION) for Letters Patent was filed October 15, 1998, Serial Number:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | nents in an OBJECT-BASED NUMERIC-                                                                                                                                                                                                                                                                                               |
| WHEREAS, QED Innovations, whose post office as Fairfax Virginia, (hereinafter referred to as ASSIGNEE), is desired interest in and to the same in the United States and throughout the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | us of acquiring the entire right, title and                                                                                                                                                                                                                                                                                     |
| NOW, THEREFORE, for good and valuable considuation acknowledged, we, ASSIGNOR, by these presents do sell, assign entire right, title and interest in and to said invention and application, including any and all United States Letters Patent a continuation-in-part and reissue of said application; and the entire invention throughout the world, including the right to apply for pathereof and to claim priority pursuant to rights accorded AS International Convention and all other available international cright, title and interest in and to any and all patents, patents importation, revalidation patents and inventor certificates which respect of said invention.                                                                                                                                                                                                                                                                                                                                                                                                                         | and transfer until said ASSIGNEE, the cation throughout the United States of granted on any division, continuation, re right, title and interest in and to said tents and inventor certificates in respect SIGNOR under the terms of the Paris ponventions and treaties; and the entire of addition, utility models, patents of |
| ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said invention, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said invention, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE'S expense, to identify and communicate to ASSIGNEE at ASSIGNEE'S request documents and information concerning the invention that are within ASSIGNOR'S possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument. ASSIGNOR'S obligations under this instrument shall extend to ASSIGNOR'S heirs, executors, administrators and other legal representatives. |                                                                                                                                                                                                                                                                                                                                 |
| ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent referred to above to ASSIGNEE of the entire right, title and interest in and to the same, for ASSIGNEE's sole use and behalf; and for the use and behalf of ASSIGNEE's legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been made.  Inventor: Evan G. Burfield                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                 |
| Address: 9852 Fairfax Square #225 Fairfax, Virginia 22031                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Signature Date: 10   5   98 SSN.: 229-23-9509 Notarization preferred but not required                                                                                                                                                                                                                                           |
| State of,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                 |
| City/County of,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                 |
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| acknowledges this instrument to be his (her) free act and deed this day of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                 |
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